

TABLE 1.—Solar radiation intensities during October, 1926—Con.
Madison, Wis.

Date		Sun's zenith distance										Local mean solar time	
		8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		Noon
		Air mass											
		A. M.					P. M.						
		e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0	5.0	e.	
		mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
Oct. 7	-----	4.57	-----	-----	0.95	1.21	1.45	1.27	1.10	-----	-----	4.95	
13	-----	4.95	-----	0.90	1.01	1.25	-----	-----	-----	-----	-----	5.36	
26	-----	2.74	-----	-----	1.19	1.32	1.45	1.33	-----	-----	-----	2.87	
29	-----	4.75	-----	-----	1.00	1.15	-----	-----	-----	-----	-----	4.37	
Means		-----	-----	(0.90)	1.04	1.23	(1.45)	(1.30)	(1.10)	-----	-----	-----	
Departures		-----	-----	-0.03	-0.02	+0.04	+0.07	+0.11	+0.08	-----	-----	-----	

Lincoln, Nebr.

Oct. 1	6.50	0.83	0.95	1.08	1.24	1.42		1.02	0.84	0.68	5.16
4	5.79				1.26	1.42					7.87
6	6.02	0.67	0.88	1.14	1.29	1.46					6.50
7	7.04				1.21	1.43	1.14		0.91	0.79	9.83
8	9.14	0.82	0.92	1.05	1.21	1.39					11.38
13	5.36				1.44	1.25	1.09	0.95	0.83		6.27
14	6.02	0.91	1.00	1.14	1.36						5.36
20	4.37		1.09	1.22	1.36	1.53	1.39	1.20	1.04	0.95	4.57
26	4.57	1.09	1.15	1.24	1.39	1.55					4.37
Means		0.86	1.00	1.14	1.29	1.46	1.26	1.10	0.94	0.81	
Departures		-0.03	+0.03	+0.02	±0.00	-0.04	±0.00	+0.01	-0.02	-0.04	

TABLE 2.—Solar and sky radiation received on a horizontal surface
[Gram-calories per square centimeter of horizontal surface]

Week beginning—	Average daily radiation					Average daily departure from normal		
	Wash- ington	Madi- son	Lincoln	Chi- cago	New York	Wash- ington	Madi- son	Lincoln
1926	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
Oct. 1	312	208	328	144	223	-16	-76	-24
8	274	246	246	163	213	-33	-10	-78
15	224	140	309	126	157	-63	-89	+15
22	239	216	266	134	151	-25	+10	+2
Deficiency since first of year on Oct. 28						-4,858	-1,302	-2,492

551.506 (261.1) WEATHER OF NORTH AMERICA AND ADJACENT OCEANS
NORTH ATLANTIC OCEAN

By F. A. YOUNG

October was an exceptionally stormy month and the number of days with gales was considerably above the normal over the greater part of the ocean. Several tropical disturbances occurred during the month, three of which were of slight intensity, but the storm that created such havoc in Cuba on the 20th was one of the most severe on record. In addition to the notes herein regarding these disturbances other particulars appear elsewhere in the REVIEW.

The number of days with fog was apparently below the normal over the entire ocean. As usual, the greatest amount occurred over the Grand Banks, where it was reported on 8 days; it occurred on from 3 to 7 days over the middle section of the steamer lanes, from 3 to 4 days off the American coast, and from 1 to 5 off the coast of northern Europe.

TABLE 1.—Averages, departures, and extremes of atmospheric pressures at sea level, 8 a. m. (75th meridian), North Atlantic Ocean, October, 1926

Stations	Average pressure	Departure ¹	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Julianeabab, Greenland	29.76	(5)	30.16	16th.	29.10	1st.
St. Johns, Newfoundland	29.86	-0.06	30.14	25th.	29.02	19th.
Nantucket	29.95	-0.07	30.40	1st.	29.38	25th.
Hatteras	30.02	-0.01	30.30	2d.	29.58	25th.
Key West	29.94	-0.04	30.12	28th.	29.70	20th.
New Orleans	30.01	0.00	30.20	27th.	29.74	24th.
Swan Island	29.78	-0.13	29.93	29th.	29.56	19th.
Turks Island	29.96	+0.01	30.06	29th.	29.80	15th.
Bermuda	30.06	+0.04	30.30	31st.	29.54	22d.
Horta, Azores	30.07	-0.05	30.34	8th.	29.60	20th.
Lerwick, Shetland Islands	29.79	0.00	30.52	4th.	28.83	9th.
Valencia, Ireland	29.93	+0.02	30.55	4th.	29.47	22d.
London	29.91	0.00	30.55	4th.	29.31	29th.

¹ From normals shown on H. O. Pilot Chart, based on observations at mean noon, or 7 a. m., 75th meridian.

² Mean of 24 observations; seven days missing.

³ No normal established.

⁴ And on open dates.

On the 1st and 2d high pressure prevailed generally along the American coast, and from the 1st until the 5th over the British Isles. On the 2d a low, central near 44° N., 39° W., was accompanied by moderate northerly gales in the westerly quadrants.

On the 3d an area of low pressure covered Newfoundland, and vessels between St. Johns and the 40th parallel reported moderate southwesterly gales.

On the 3d and 4th the cable steamer *Henry Holmes* encountered winds of gale force in the vicinity of St. Lucia, as shown in table.

On the 4th the Newfoundland Low of the 3d was central near 50° N., 40° W., and stormy weather still prevailed over a limited area between the 40th and 50th parallels and 40th and 55th meridians.

On the 5th and 6th comparatively high pressure and moderate winds were the rule over the ocean, except that on the latter date Belle Isle was near the center of a depression that remained in that vicinity until the 13th, although it was surrounded for the most part by moderate winds.

On the 8th a low was central near 57° N., 12° W., that afterwards developed into a very severe disturbance, as it moved eastward. On the 9th the storm area extended from the 45th to 60th parallels, and from the 5th meridian, east, to the 20th, west, and the land stations on the British Isles reported winds of force 6 to 9, with barometric readings as low as 28.82 inches. This disturbance moved rapidly eastward and on the 10th was in the vicinity of the North Sea, where strong northwesterly gales prevailed throughout the 12th.

On the 12th a well-developed low was central near 55° N., 32° W., with strong westerly gales in the southerly quadrants. On the same day there was also a secondary low of comparatively slight intensity off the west coast of Ireland. By the 13th these two lows had evidently combined and were now over the North Sea. On the 13th

there was also a disturbance near 45° N., 45° W., that moved steadily eastward, its center on the 14th being near 47° N., 32° W. Judging from reports received, this low suddenly curved southward and then recurved toward the northeast, as on the 15th it was central near 40° N., 35° W., and on the 16th near 48° N., 21° W. It moved but little during the next 4 days and gradually filled in.

From the 13th to 15th gale reports were received from vessels in widely scattered parts of the ocean, while on the 16th and 17th the stormy conditions were confined to a limited area over the eastern section of the steamer lanes.

On the morning of the 18th the tropical disturbance previously referred to was in the vicinity of Swan Island. On the same day there were also areas of low pressure off the coast of Newfoundland and over the eastern section of the steamer lanes, both lows being accompanied by moderate to strong gales. On the 18th there was also a shallow depression central near 35° N., 52° W., that was surrounded by moderate winds.

On the 19th the tropical disturbance was in the vicinity of the Isle of Pines, while the two northern lows of the 18th had changed but little in position and intensity. The shallow depression moved rapidly eastward, increasing in intensity, and on the 19th was central near 32° N., 37° W., with strong southerly gales in the easterly quadrants.

On the 20th, as shown on Chart VIII, the tropical disturbance was over the Florida Straits, with moderate weather the rule over the remainder of the ocean, although a well-defined low was central near the Azores.

Charts IX to XIII cover the period from the 21st to 25th, inclusive, and give an idea of the track of the tropical hurricane of that period. On the 25th this storm was central near 38° N., 43° W., while both the American and European coasts were being swept by severe gales.

By the 26th the tropical storm had practically filled in, although gales were reported near 33° N., 47° W., as shown by storm reports. On the 26th there were also lows over the province of Quebec, in the mid-eastern section of the steamer lanes, and over the North Sea, with moderate to strong gales near the respective centers. By the 27th, the low over the steamer lanes had moved eastward and was now central near 50° N., 17° W., with heavy weather prevailing between the 5th and 30th meridians.

On the 27th there was a depression near 37° N., 67° W., that afterwards developed in intensity, although of limited extent. On the 28th the center of the northern low was near the English Channel, while the storm area extended from the 40th to 55th parallels and 10th to 30th meridians. During the next 48 hours this disturbance moved but little and gradually filled in. On the 30th Belle Isle was near the center of a low, and on the same day there was also an area of low pressure off the coast of southern Europe.

On the morning of the 31st southwesterly winds of force 3 to 5 were reported along the American coast between Hatteras and the Virginia Capes that afterwards increased to moderate gale force. On the 31st there was a severe disturbance near 55° N., 27° W., and moderate to strong gales swept the steamer lanes between the 15th and 30th meridians.

OCEAN GALES AND STORMS, OCTOBER, 1926

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	To—	From—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
			° ' "	° ' "				Inches					
Tuscaloosa City, Am. S. S.	Port Said	Boston	40 06 N.	43 00 W.	Oct. 2	2a., 2	Oct. 4	29.65	N	N	NW	NNW, 10.	
Henry Holmes, Br. S. S.	St. Thomas	St. Vincent	Off St.	Lucia	3	7p., 3	4	29.80	Var	SE, 6	SE	—, 8	ESE-SE.
Lord Antrim, Br. S. S.	Sydney, N. S.	Belfast	55 02 N.	18 24 W.	8	9 p., 8	9	29.38	W	WNW, 7	NW	NW, 8	W-NW.
Brush, Am. S. S.	Galveston	Rotterdam	36 00 N.	70 38 W.	9	4 p., 9	10	29.90	NNW	NNW, 7	NW	NNW, 8	Steady.
Stockholm, Swed. S. S.	New York	Gothenburg	58 22 N.	9 35 W.	9	5 a., 9	11	28.93	NNW	NE, 6	W	NE, 10	NW-N-NE.
Edinburgh, Am. S. S.	Hamburg	Pensacola	53 32 N.	8 42 E.	9	5 a., 10	10	28.77	SW	WSW, —	SW	NW, 10	W-WSW.
Breedijk, Du. S. S.	Rotterdam	Montreal	53 00 N.	29 35 W.	11	11p., 11	12	29.36	WSW	WSW, 5	NNW	W, 10	
West Hika, Am. S. S.	Mobile	Bremen	48 37 N.	22 41 W.	14	Noon, 14	19	29.53	NE	E, 9	ESE	E, 9	NE-E-ESE.
Nieuw Amsterdam, Du. S. S.	New York	Rotterdam	48 40 N.	25 34 W.	16	6 a., 16	17	29.86	ENE	ENE, 7	E	ENE, 9	Steady.
Columbus, Ger. S. S.	Cherbourg	New York	48 38 N.	28 50 W.	17	Mdt., 17	18	29.71	E	NE, 6	NE	—, 9	
Athena, Am. S. S.	New Orleans	Cristobal	16 30 N.	82 15 W.	18	Noon, 18	19	28.75	NE	Calm	SSE	S, 12	N-Calm-S.
Topa Topa, Am. S. S.	do	Glasgow	41 21 N.	53 28 W.	18	7 p., 18	18	29.36	SE	SE, 11	NE	SE, 11	SE-NE.
Mojave, Am. S. S.	Providence	Colon	18 30 N.	82 50 W.	18	1 a., 19	19	28.06	NE	ENE, 12	SSE	—, 12	ENE-N-SSW.
Selma City, Am. S. S.	Mobile	San Pedro	20 28 N.	84 19 W.	19	4 p., 19	20	29.14	NE	NE, 12	SW	—, 12	NE-N.
St. Joseph, Fr. S. S.	Havre	Colon	30 55 N.	35 43 W.	19	2 p., 19	19	29.48	S	SSE, 8	SW	SSE, 10	SSE-SW.
Zacapa, Am. S. S.	New York	Central America	24 24 N.	80 54 W.	20	6 p., 20	21	28.24	E	NW, 12	—	—, 12	E-NE-NW.
Ulua, Br. S. S.	do	Habana	24 04 N.	82 12 W.	20	2 a., 20	20	29.07	ENE	N, 12	NNW	N, 12	NNE-NNW.
San Blas, Br. S. S.	Habana	Limon	23 20 N.	83 00 W.	19	10 a., 20	20	29.44	E	NNE, 10	NNW	NNE, 12	Steady.
Cripple Creek, Am. S. S.	Galveston	Liverpool	48 07 N.	26 52 W.	20	7 p., 20	23	29.78	ESE	ENE, 10	NW	ENE, 10	NNE-N.
H. H. Asquith, Br. S. S.	Colon	Newark	26 48 N.	76 25 W.	21	1 p., 21	21	28.44	SSE	S, 12	NW	S, 12	S-SW-NW.
Woensdrecht, Du. M. S.	Thameshaven	Texas City	27 25 N.	73 45 W.	21	—, 21	21	28.08	SE	—, 12	NNW	—, 12	SE-W.
Motocarlina, Belg. S. S.	Baton Rouge	Antwerp	40 12 N.	37 26 W.	21	Noon, 21	22	29.52	NW	NW, 7	NW	NW, 9	
Tulsa, Am. S. S.	Antwerp	Jacksonville	33 07 N.	68 16 W.	22	12.30 p., 22	22	29.14	SSE	NNE, 12	N	NNE, 12	NE-NNE.
Nitonian, Br. S. S.	do	Galveston	29 29 N.	64 13 W.	21	8 a., 22	22	29.43	SSW	S, 6	NNW	WSW, 11	SSW-W-N.
Brush, Am. S. S.	Galveston	Rotterdam	49 30 N.	17 12 W.	21	4 p., 22	23	29.60	NE	N, 10	NE	N, 10	NE-N.
San Guerri, Br. S. S.	Tuxpam	London	35 20 N.	62 40 W.	22	9 p., 22	23	29.28	NNE	N, 10	NW	NNW, 12	N-NW.
Kerhonkson, Am. S. S.	Londonderry	Norfolk	40 05 N.	70 15 W.	24	6 p., 24	25	29.80	SE	SE, 7	SW	SW, 10	SW-W.
St. Andrew, Br. S. S.	Rotterdam	Galveston	38 50 N.	45 00 W.	24	Noon, 24	25	29.06	SSW	SW, 10	NNE	NW, 10	SSW-NW.
Stockholm, Swed. S. S.	Gothenburg	New York	40 30 N.	69 42 W.	25	7 p., 25	25	29.38	S	SW, 9	N	SSW, 11	S-SW-W.
Texas, Fr. S. S.	Havre	New Orleans	33 42 N.	44 12 W.	25	10 p., 25	26	29.51	W	SE, 9	E	WSW, 10	WSW-SE.
Welshman, Br. S. S.	Avonmouth	Montreal	50 16 N.	33 16 W.	25	8 a., 25	26	29.25	SW	NW, 8	NNE	—, 10	W-NW.
Minnehaha, Am. S. S.	New York	Plymouth	50 15 N.	4 12 W.	24	Noon, 25	26	29.25	WNW	NW	NW	NW, 9	WNW-NW.
Adra, Br. S. S.	Portland, Eng.	Hampton Roads	46 06 N.	24 04 W.	26	Noon, 26	27	29.48	WNW	WNW, —	N	—, 11	Steady.
Topa Topa, Am. S. S.	New Orleans	Glasgow	53 46 N.	19 52 W.	25	4 p., 26	26	29.34	SE	SE, 5	E	SE, 10	SE-E.
Hog Island, Am. S. S.	Gibraltar	New York	37 42 N.	67 10 W.	27	Mdt., 27	29	29.65	NW	NW, 9	—	NW, 9	SE-NW.
Canadian Freighter, Br. S. S.	Glasgow	Colon	44 20 N.	21 15 W.	26	4 a., 27	28	29.27	SW	NNW, 9	N	NNW, 10	WNW-N.
Topa Topa, Am. S. S.	New Orleans	Glasgow	54 14 N.	18 04 W.	27	4 a., 27	28	29.34	E	ENE, 2	NE	NE, 11	E-NE.
Amsterdam, Du. S. S.	Amsterdam	Baton Rouge	31 45 N.	55 10 W.	28	2 p., 28	29	29.55	SSE	SW, 10	NNW	SW, 10	SSW-SW.
Athlone, Br. S. S.	Batoum	London	42 53 N.	9 20 W.	27	2 a., 29	20	29.05	S	N, —	N	N, 9	Steady.
Colonian, Br. S. S.	Montreal	Avonmouth	55 59 N.	24 33 W.	30	7 p., 31	Nov. 1	29.18	SE	W, 8	W	ESE, 10	SSW-WSW.
Hoxie, Am. S. S.	Hampton Roads	Glasgow	55 12 N.	15 45 W.	31	4 p., 31	1	29.66	SSE	SSE, 8	WSW	SSE, 11	SSE-SSW.